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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WYSZOMIERSKI, GEORGE P

ART UNIT PAPER NUMBER

1742

DATE MAILED: 06/26/2003

18

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,683

Applicant(s)

SHINAVSKI ET AL.

Examiner

George P Wyszomierski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) 1-27 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 35,36 and 38-48 is/are allowed.
- 6) ☒ Claim(s) 28-33 and 37 is/are rejected.
- 7) ☒ Claim(s) 34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,12.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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1. Applicant's election with traverse of Group II, claims 28-48 in Paper No. 14 is acknowledged. The traversal is on the ground(s) that examination of all claims would not be burdensome and could be easily performed given the relationship of the subject matter of the two groups of claims. This is not found persuasive because applicant has not addressed the reason for the restriction requirement, namely that the non-elected products can be made by a method other than the elected process. Further, with respect to the two groups of claims, the groups are classified in different places as set forth in the restriction requirement, and a complete search for either group would entail searching not only in those two places, but in a number of auxiliary subclasses for each group as well.

The requirement is still deemed proper and is therefore made FINAL.

2. Claim 37 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The dependency of this claim appears to be mistaken, as claim 35 lacks antecedent basis for "the tungsten films". The examiner suggests revising this claim to depend from claim 38.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 28, 29 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Keem et al. (U.S. Patent 4,619,865). Keem discloses depositing multilayers of materials including a Group VI refractory metal and metal compounds such as tungsten carbide. The layers are of a thickness as recited in instant claim 29; see example 2 of Keem. Further, column 3, lines 52-62 of Keem indicate that the prior art method results in structures that lack extended planes through which fractures can propagate, i.e. in accordance with lines 9-11 of independent claim 28. Thus, Keem is held to fully disclose all aspects of the invention as presently claimed.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 30, 31, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keem et al.

Keem, discussed supra, does not disclose any specific examples of a chemical vapor deposition process or of depositing tungsten or tungsten boride. However, Keem column 4, lines 45-48 indicates that a CVD process is within the purview of the prior art. Further, the paragraph which overlaps columns 2-3 of Keem indicates that deposition of the materials recited in instant claims 31 and 33 would be within the purview of the Keem et al. process. Consequently, a prima facie case of obviousness is established between the disclosure of Keem et al. and the invention as presently claimed.

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7. Claims 28, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al. (U.S. Patent 5,538,816).

Hashimoto discloses chemical vapor deposition of layers which may comprise, e.g. chromium and a chromium compound; see Hashimoto column 12, lines 49-56. In the examples of Hashimoto, the individual layers are of a thickness as recited in instant claim 29. Because the thickness used in the prior art is consistent with the preferred embodiments of the present claims, it is assumed that this thickness meets the limitations as defined in lines 9-11 of instant claim 28. Hashimoto does not specify repeating an alternate deposition of the two layers as set forth in lines 12-14 of claim 28. However, if the "required thickness" of line 14 of claim 28 were simply the thickness of two layers as disclosed by Hashimoto, then the process as claimed would fall within the purview of the prior art. Thus, in the absence of any numerical limitation on this "required thickness", the claimed invention is held to be at best an obvious variant of what is disclosed by Hashimoto et al.

8. Claims 28, 30, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garg et al. (U.S. Patent 4,855,188).

Garg discloses chemical vapor deposition of films of tungsten and tungsten carbide upon a substrate. The thickness of the carbide films of Garg is far greater than any shown in the present application, and thus it is a reasonable assumption that such films would meet the thickness limitations of lines 9-11 of instant claim 28. With respect to lines 12-14 of claim 28, Garg does not specify repeating an alternate deposition of the metal and carbide layers. However, if the "required thickness" of line 14 of claim 28 were simply the thickness of two layers as disclosed by Garg, then the process as claimed would fall within the purview of the

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prior art. Thus, in the absence of any numerical limitation on this "required thickness", the claimed invention is held to be at best an obvious variant of what is disclosed by Garg et al.

9. Claim 34 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, as the prior art does not disclose or suggest a process which includes depositing a silicon carbide film consistent with that as claimed.

Claim 37 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Claims 35, 36, and 38-48 are allowable over the prior art of record, as the prior art does not disclose or suggest a process consistent with that as recited in independent claim 35.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Wyszomierski whose telephone number is (703) 308-2531. The examiner can normally be reached on Monday thru Friday from 8:00 a.m. to 4:30 p.m. Eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on (703) 308-1146. The fax phone number for this Group is (703) 872-9310 for all correspondence except for After Final amendments in which case the Fax number is (703) 872-9311. The Right fax number for this examiner is (703) 872-9039. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.


GEORGE WYSZOMIERSKI
PRIMARY EXAMINER

GPW
June 24, 2003